

REMARKS/ARGUMENTS

The Office Action dated September 30, 2004, and the references cited therein have been received and carefully reviewed.

As a result of the Office Action, the drawings are objected to for not showing the "jet opening downstream channel has a region in which its diameter is substantially double the diameter of the jet opening," as recited in claims 3 and 6-9. Applicants respectfully traverse this objection. The jet opening downstream channel having a region is illustrated by reference numeral "1b" in Fig. 1(a), reference numeral "2c" in Fig. 1(b), and reference numeral "3b" in Fig. 1(c). Moreover, the diameter of the jet opening downstream channel being substantially double the diameter of the jet opening is illustrated by reference numeral "1a" in Fig. 1(a), reference numeral "2a" in Fig. 1(b), and reference numeral "3a" in Fig. 1(c). Therefore, it is respectfully requested that the objection to the drawings be withdrawn.

Furthermore, claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By the above amendments, claims 1 and 9 have been amended to overcome those Section 112, second paragraph, indefiniteness rejections, and all pending claims are believed to be in compliance with the requirements of MPEP 2173. No new matter has been added.

Moreover, claims 1-4, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 5,314,122 to Winter; claims 1-6, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 5,054,691 to Huang; claims 1, 2, 5, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 6,059,205 to

Ricco; and, claims 3, 4, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricco. These references have been carefully reviewed but are not believed to show or suggest Applicants' invention as now claimed in any manner. Reconsideration and allowance of the pending claims is therefore respectfully requested in view of the following remarks.

As a preliminary matter, as the Examiner is aware, the present invention encompasses a valve structure in which the valve noise is substantially reduced during the operation of the fuel injector by arranging the diameter of the jet opening downstream channel to prevent leakage of noise to the outside through the valve seat.

By the above amendments, claim 1 has been amended to include the limitations of claim 4, and claims 3 and 4 have been cancelled without prejudice or disclaimer. No new matter has been added.

According to MPEP 2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Moreover, according to MPEP 2143.03, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. Amended claim 1 now recites the following limitation: "the diameter of the jet opening downstream channel is substantially double the diameter of the jet opening at least in a region right below the jet opening." Neither Huang, nor Winter, nor Ricco teaches or discloses the diameter of the jet opening downstream channel being substantially double the diameter of the jet opening at least in a region right below the jet opening, as now required by claim

1. Therefore, it is respectfully requested that the Section 102 anticipation rejections be withdrawn.

Moreover, in rejecting claims 3, 4, and 7-10 under Section 103 as being unpatentable over Ricco, the Examiner has concluded that "doubling the diameter of chamber 38 to that of conduit 44 is a mere optimization of workable parameter," and "it would have been obvious to one having ordinary skill in the art at the time the invention was made to doubled the diameter of chamber 38 to that of opening 44, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art."

In establishing a *prima facie* case of obviousness, it is incumbent upon the Examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. *Ex parte Clapp*, 277 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). Moreover, the fact that the prior art structure could be modified does not make such a modification obvious in the absence of the prior art suggesting the desirability of doing so. Here, the Examiner has provided no clue as to where support is found for the reasoning set forth as the motivation and suggestion for the rejection under Section 103, and therefore it stand merely as the Examiner's unsupported opinion. This being the case, the question arises as to why one of ordinary skill in the art would have been to led to increase the diameter of the jet opening downstream channel to substantially double that of the diameter of the jet opening at least in a region right below the jet opening. That is, what advantage would be gained by doubling the diameter. Clearly, none is disclosed or suggested by the Ricco

reference, and it is respectfully requested that the Section 103 rejection be withdrawn.

Moreover, Applicants submit herewith a Declaration Traversing Rejection under 37 C.F.R. 1.132, which provides further evidence of the advantages of having the diameter of the jet opening downstream channel substantially double the diameter of the jet opening at least in a region right below the jet opening.

Claims 2 and 5-10 are dependent from claim 1 and are therefore allowable for the same reasons as claim 1.

Claim 11 has also been amended to include the limitation "wherein the diameter of the jet opening downstream channel is substantially double the diameter of the jet opening at least in a region right below the jet opening," and it is believed to be allowable for the same reasons provided in connection with claim 1.

Each issue raised in the Office Action dated September 30, 2004, has been addressed and it is believed that claims 1, 2, and 5-11 are in condition for allowance. Wherefore, Applicants respectfully request a timely Notice of Allowance be issued in this case.

Respectfully submitted,
DENNISON, SCHULTZ
DOUGHERTY & MACDONALD

By: 

Amir H. Behnia
Reg. No. 50,215
(703) 837-9600 Ext. 16